

AMARC

...From Desert to Battlefield

Supplement to the Desert Airman

Volume 3 Issue 4
May 6, 2005

Preservation: history becomes high-tech

By Rob Raine

AMARC Public Affairs

At the Aerospace Maintenance and Regeneration Center, the art and science of aircraft preservation has evolved beyond merely parking them in the dry desert. The 126 members of AMARC's preservation team in-process aerospace assets to ensure the long-term availability of regenerable aircraft and the availability of valuable internal components to operational forces.

"We normally process an average of 24 to 30 aircraft a month," said Ron Black, chief of the Center's Storage Division. Mr. Black explained that arriving aircraft undergo a number of steps including having their explosive egress systems made safe, fuel removed, engines and fuel systems preserved, and a complete wash and corrosion inspection, before being sealed and parked for storage. The full process can take as long as 60 days. White preservative Spraylat coating, visible on aircraft from outside AMARC's perimeter fence, represents the final stage of that preservation process.

"Spraylat is both the name of a company and of its preservative compounds," said materials engineer John Stutz. "We use both black Spraylat, a latex rubber emulsion, and white Spraylat, an acrylic compound similar to a roof coating although more flexible to achieve desired preservation results."

The final sealing involves three stages: aircraft preservation technicians cover crevices and joints with wide black electrician's tape; and cover engine inlets and other sensitive areas with barrier material to keep out birds and rodents.

"We also wax radomes, deicer boots, and canopies to keep preservation material from sticking to the



Aircraft preservation technician Gerardo Llamas applies white Spraylat preservative over black during the final preservation of a Navy E-2 Hawkeye.

surfaces," said preservation technician Manny Vasquez.

After taping, technicians apply two coats of black Spraylat to seal the aircraft and one coat of white for temperature control. Without the white coating, temperatures inside an aircraft could exceed 200-degrees and destroy sensitive internal components. White Spraylat keeps interior temperatures within 10 to 15 degrees of the ambient temperature.

Preservation crews can usually seal an aircraft in two days to a week, depending on the size and type of aircraft. Temperature and humidity affect dry time, although eight to 24 hours is the norm. Spraylat cannot be applied when humidity exceeds 50 percent, a rarity in Southern Arizona. Nor can it be applied when aircraft skin temperature reaches 125 degrees because the compound essentially glues itself to the surface (normally it peels off like a surgical glove by lifting an edge with a putty knife).

When AMARC receives a new type aircraft, Mr. Stutz works with the Weapon System Program Office to determine appropriate sealing requirements. After sealing a new aircraft type for the first time, the team washes it, then removes the Spraylat to inspect for leaks. If the aircraft remains dry, the preservation branch adopts this sealing process. AMARC also works closely with service customers to address special preservation requirements.

Once sealed, AMARC tows aircraft to storage locations identified by six-digit numbers denoting overall storage area, row within that area, and individual location within that row. Regenerable aircraft, those that might fly again, receive general inspection every six months. Inspectors check Spraylat integrity, air the tires and struts, make sure control-surface locks are installed, and check tie-downs. Such inspections insure the long-term viability of stored aircraft.

AMARC re-preserves such aircraft every four years by removing Spraylat, washing the aircraft, running and preserving the engine and fuel system, and re-coating the aircraft with Spraylat.

"We store more than \$33 billion worth of aerospace assets at AMARC," said Ron Black. "The efforts our team puts into preserving them, ensures they are ready when our operational forces call for them."

AMARC maintenance director earns AFMC annual award

By Rob Raine

AMARC Public Affairs

For her outstanding performance as AMARC's Maintenance Director, General Gregory Martin recently presented Ms. Doreen Wells with the 2004 Air Force Materiel Command Outstanding Depot Maintenance Manager (Production) award.

"We all know of the outstanding job she has done in taking the Maintenance Directorate back-to-basics," said AMARC Commander, Colonel Lourdes Castillo.

Despite the demanding nature of the task, Ms. Wells generated cost savings through organizational actions, process improvements, economies of scale, and effective funds management. She also transformed the directorate by fostering a single-team approach, converting barriers into windows that reveal a common vision across production work centers.

As a result of her supervision, the A-10 wing repair branch identified and eliminated waste and improved value



Col. Castillo (left) presents Ms. Wells' award on behalf of AFMC

to customers. Costs fell by 30 percent. The A-10 wing repair branch developed procedures and tooling to overcome the challenge posed by cracks found in wings—saving \$1.02 million in procurement costs.

Under her decisive leadership, AMARC personnel reclaimed and shipped 22,567 parts valued at \$695 million.

Air Force and Navy operational units averted grounding aircraft as AMARC removed, tested, packaged, and shipped critical components within 8 hours upon need notification. Ms. Wells transformed AMARC's work loading section into a business office with a staff trained in customer relations and partnering.

Her focused attention slashed work-related mishaps by 33 percent, kept more than 3,500 pieces of aerospace ground equipment at a 90 percent in-commission rate, and delivered 18 regenerated F-4s for full scale aerial target modification, on time with zero discrepancies - incredible!

"Her job has not been easy," said Col. Castillo. "But her commitment to the organization and our mission transformed MA into a much better organization than it was 15 months ago."

Ms. Wells competed against depot maintenance managers from Tinker, Warner-Robins, and Ogden Air Logistics Centers for this prestigious award. Congratulations to Ms. Wells on earning this most deserved recognition.

What leadership is not

Col. Lourdes Castillo,
AMARC Commander



What is leadership? And more to the point, what is great leadership? Military and civilian scholars can quote you list upon list of leadership characteristics. But most, if not all of the characteristics they value—things like integrity, hard work, and communication skills—are also things that will help you be a successful elementary school teacher, plumber, or cab driver. Scholars can also point out hundreds of examples of great leaders. But their lists tend to lean toward Presidents and generals who served during wartime. And it seems that any general that happens to be in command on the winning side at the conclusion of a war automatically makes the “great” list. For the most part, history rarely finds its great generals coming from losing nations (Confederate US Civil War generals being the American exceptions). Face it—Most Valuable Players rarely come from losing teams.

So instead of defining what leadership is, I thought I'd take this time to define what leadership is not. This

thought process leads me to three questions: 1) What is bad leadership? 2) What is no leadership? And 3) What is worse, bad leadership or no leadership?

First, what is bad leadership? In military organizations, leadership is often defined as a combination of a leader interacting with followers to accomplish a mission. So it seems logical that if all three of these elements must succeed together for each to succeed individually, then it follows that if one or two of the elements fail, then the others will also fail. But that's not the case. If the followers are fantastic and do the mission incredibly well—despite bad leadership—then all three will likely be considered successful. Given this fairly common scenario, we can see that good followers are the critical key to mission accomplishment, and not necessarily a good leader. Only when a leader leads his/her followers in a direction that is away from mission accomplishment will the organization normally fail. Perhaps unfocused leadership, then, is bad leadership.

Second, what is no leadership? History shows that in military units, there is never a complete lack of leadership. For example, countless times during World War II, leaders were killed, wounded, or were replaced, and in every instance, others stepped forward to ably fill their roles. In fact, Gen Dwight Eisenhower began WWII as a Lieutenant Colonel, and rose six grades to become a tremendous commander and leader. Here at

AMARC, during peacetime and at war, we find extremely effective leaders at every level, able to successfully deal with both the mistakes their bosses make and the problems presented to them by their subordinates. Lack of leadership is seldom the issue. We grow and develop good leaders everywhere throughout our organization.

Thus, only our final question remains. What is worse, no leadership or bad leadership? Since our theory suggests that no leadership really doesn't exist, then the real question becomes, how can we recognize and avoid bad leadership? How can we avoid leadership that fails to produce good followers and is aimed at mission accomplishment? In theory, it's simple: Integrity First, Service Before Self, and Excellence in All We Do. Leadership is not acting unethical, dishonest, or in one's own best interest. It's not putting individuals above the organization, failing to develop followers capable of accomplishing the mission, or leading one's followers toward goals that don't contribute, in some way, to mission accomplishment. And finally, leadership is not about accepting the status quo, allowing corners to be cut, or leaving out even a single person in Excellence in All We Do.

Leadership is focusing on the mission and developing good followers. Take the time to do what's needed to provide your followers the tools to accomplish our mission. Take the time to lead.

The wing is the thing

By Rob Raine

Public Affairs Specialist

Regenerating wings on the A-10 by strengthening stress points will extend the life of the aircraft by 25 years and save the American taxpayer from the expense associated with buying a new aircraft. But when the supply system no longer has the parts needed to replace stress-cracked wing-station 110 fittings, logically wing repairs should have to stop.

AMARC's wing repair branch team is turning such logic around.

"We can't buy the fittings through the supply system because they're out of them," said Sam Smith, wing repair branch chief. "So we have to make the fittings ourselves."

That task falls to Jaime Tapia, Jon Irwin and AMARC's machine shop team members. Using a HAAS VF-3 vertical machining center, Mr. Irwin programs in a step-by-step machining process that turns 120-pound blocks of aircraft aluminum into finished wing-station 110 fittings.

"I'm using a 50-pound machinable wax billet to start," Mr. Irwin explained. The blue wax

rectangle serves as a template to fine-tune the machining center in preparation for aluminum billets.



Jon Irwin with factory and partially machined (inset) WS-110 fittings.

"The fittings we purchased through the supply system were forged-aluminum," said Mr. Irwin. "They're no longer available, but now AMARC can machine exact replacements for parts we used to buy."

Forged fittings obtained through the supply system, cost approximately \$3,900. The machined fittings are significantly less expensive costing AMARC about \$2,500 to manufacture. Even this cost must be considered small when compared to the \$1.4 million value of the A-10 wings returned to service.

The new fittings will eventually be fine-tuned to tolerances of three-thousandths of an inch, using other tools developed by the wing repair branch.

"The pilots tell me the new wings feel sturdier," said Sam Smith. "The way we're beefing them up, I'm not surprised."

With the regenerated wings and service life extension program related improvements, the Air Force expects to operate the A-10 through the first quarter of the 21st century.

Hail, Farewell, & Congratulations

Congratulations to AMARC Center Director Mr. Gregory Garcia for his appointment to the Senior Executive Service grade of DV-6. The civilian grade equates to Air Force brigadier general. This summer, Mr. Garcia will join the team at Headquarters, Operations and Sustainment Systems Group (OSSG), Maxwell AFB, Gunter Annex, Georgia, as Director.



Mr. Gregory Garcia

Mr. Garcia plans to report OSSG in early summer after his transition from AMARC.

Mr. Sam Malone will relieve Mr. Garcia as AMARC's new Center Director. Mr. Malone joins the AMARC team from the 76th Propulsion Maintenance Group, 76th Maintenance Wing, Tinker Air Force Base, Oklahoma where he served as Deputy Director.



Mr. Sam Malone